

STUDIES IN COSTA RICAN DERMAPTERA AND
ORTHOPTERA

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My interest in the Orthopterous fauna of Costa Rica extends back to the year 1903, when in three papers¹ were recorded the first collections from that country examined by me. Since that time much additional Costa Rican material has passed into my hands, many species have been recorded and numerous ones described, but a very large portion of these collections is as yet unreported. Much progress has been made in the development of our knowledge of the Dermaptera and Orthoptera of Mexico, Central America and northwestern South America, and a far better groundwork for resumed study is now available.

For a number of years one of my greatest desires has been to prepare a comprehensive catalogue and faunistic study of Costa Rican Dermaptera and Orthoptera. For a tropical region of greatly diversified conditions, the fauna of Costa Rica is as rich as, and, relatively speaking, probably better known than, that of any other country of similar size within the American tropics. There exists a possibility of the realization of my desire in the not too distant future, and a definite amount of study time is now being given to the extensive collections in hand. These I hope to be able to supplement, before final publication, with additional, personally secured, material and observations.

As it appears desirable to make known new forms recognized, and important changes or synonymy necessitated as the work progresses, papers under the title here given will be brought out from time to time.

¹ Studies in American Forficulidae. Proc. Acad. Nat. Sci. Phila., 1903, pp. 299-312. Studies in American Blattidae. Trans. Amer. Entom. Soc., XXIX, pp. 259-290. On Two Earwigs of the Genus *Labia* from Costa Rica. Entom. News, XIV, pp. 292-293.

PAPER ONE

TWO NEW GENERA AND THREE NEW SPECIES
OF DERMAPTERA

A study of the Dermaptera material now in hand, and a correlation of all published Costa Rican records of the order, has been completed, and the present small contribution treats of the undescribed material located. One of the genera described as new is based on a species long known; a better acquaintance with its relatives makes its generic separation imperative. The other new genus is necessitated by the rediscovery of the genotype of the genus *Necolobophora*.

LABIIDAE

LABIINAE

Prolabia calverti new species (Plate XVII, fig 1.)

A member of the *Arachidis* Group of the genus and far more closely related to *P. triquetra* Hebard,² from southern Mexico, than to the other species of the assemblage. In general form the present species is very similar in the male sex to *triquetra*, but the forceps, while of the same general type, have their form less robust, their dorsal carinae nearer the median line of the branches, and the proximo-internal tooth is a more rounded tubercle; the pygidium of the male is proportionately shorter and broader than in *triquetra*, its caudo-lateral angles are less pronounced, the distal margin subtruncate and the dorsal surface inflated with an evident medio-longitudinal sulcation. From *arachidis* the present species is markedly distinct, showing much the same differences as *triquetra*. The feature of pygidial inflation is marked and quite diagnostic.

Type.—♂; Reventazon Valley below Juan Viñas, Costa Rica. Elevation, 2500 feet. May 1, 1910. (P. P. Calvert; from unrolled *Heliconia* leaf.) [Academy of Natural Sciences of Philadelphia, Type no. 5379.]

² Trans. Amer. Entom. Soc., XLIII, p. 417, pl. xxviii, figs. 5, 6 and 7, (1917). [Orizaba (type locality) and Minatitlan, Vera Cruz, Mexico; Chalchicomula, Puebla, Mexico].

Size small; form moderately slender, less robust than in *triquetra* and much more slender than in *arachidis*; surface moderately polished with exceptions noted below.

Head in outline broad pyriform, greatest width across eyes faintly less than greatest length of same; interantennal-interocular region with its central area subdeplanate; occiput with paired arcuately and transversely disposed impressions,³ which are separated mesad, in contact with eyes laterad; caudo-lateral occipital angles well rounded, this region with a few short bristle-like hairs; median portion of occipital margin shallowly obtuse-angulate emarginate. Eyes little prominent, slightly longer than postocular portion of genae. Antennae damaged.⁴

Pronotum subquadrate, slightly transverse; cephalic margin subtruncate, lateral margins approximately parallel, caudal margin broadly and entirely arcuate, passing into the lateral margins; surface of cephalic half of disk appreciably convex with a brief median sulcation cephalad, caudal section mesad with a subequal section reaching to caudal margin and weakly convex in transverse section, narrow cephalo-lateral and broad caudo-lateral portions subdeplanate. Tegmina as in *P. triquetra*, but distal margin weakly concave. Wings projecting distad of the tegmina somewhat less than one-half of length of latter, immediate apex narrowly truncate.

Abdomen short fusiform, much as in *triquetra*, surface largely and obscurely impresso-punctulate and almost completely without hairs; abdominal keels as in *triquetra* but distal pair more pronounced; anal segment rectangular transverse, greatest length nearly three times in greatest width; distal margin with extremely slight projections above insertion of each forelegs arm, these projections weaker than in *triquetra*, mesad this margin is truncate; surface of anal segment appreciably declivent meso-distad and there, near margin, with a brief median sulcation. Pygidium subquadrate, about one and one-third times as wide as long, lateral margins subparallel, caudo-lateral portions narrowly oblique truncate, distal margin subtruncate, non-cingulate, lateral angles of caudal margin with brief tuberculations; surface of pygidium markedly inflated and bullate, a deep medio-longitudinal sulcation indicated on proximal three-fourths. Forceps of the general type and form found in *P. triquetra*, but more slender and rather more regularly tapering, in section more nearly equilateral than in *triquetra*, as the dorsal carina instead of being internal in position, as in *triquetra*, more nearly approaches the median line of the arm, particularly mesad; proximo-internal tooth distinct though small, rounded tuberculate; internal margin distad of tooth unarmed; distal half

³These impressions may have been produced by shrinkage of the elutrin in the drying of this specimen, which had been preserved in alcohol, and for that reason we have not given them as diagnostic features. They are represented in *triquetra* only by slight indications, and, while quite regular in the present specimen, we prefer to await the acquisition of further material before citing them as distinguishing features. It is necessary, however, to discuss them in the general description on account of their striking character and, possibly normal, occurrence in the type.

⁴These appendages were intact when first examined, both in spirits and dry, and the preliminary generic assignment was then made.

of arms with dorsal surface less deplanate than in *triquetra*, dorso-external face more concave than in *triquetra*; hairiness of forceps as evident as in *triquetra*, most pronounced on external surfaces. Penultimate sternite as in *triquetra*. Limbs robust, as in *triquetra*, femora inflated.

General color bone brown to clove brown on the head and pronotum, passing to russet on the abdomen and walnut brown on the forceps. Tegmina evenly paling in sutural half to hazel and on humeral angle to ochraceous-buff, the disto-lateral section remaining dark. Exposed portion of wings ochraceous-buff proximad, passing toward general color distad. Dorsum of abdomen with an indefinite infuscation mesad, which is marked only on anal segment. Pygidium dull ochraceous-tawny. Limbs of the general color, paling in the vicinity of the articulations and on the tarsi to buffy.

Length of body (exclusive of forceps), 6.2 mm.; length of pronotum, 1; greatest width of pronotum, 1.1; length of tegmen, 1.8; length of forceps, 1.9.

The type is unique.

It gives me great pleasure to dedicate this interesting species to its collector, my colleague Dr. Philip P. Calvert, as a token of esteem as well as appreciation of his kindly help and advice, often sought and here gladly acknowledged, and also in recognition of his important contributions to our knowledge of the entomology of Central America.

FORFICULIDAE

OPISTHOCOSMIINAE

As Hebard has already suggested,⁵ we feel convinced that the *Neolobophorinae* is not sufficiently distinct from the present subfamily to warrant its recognition as of equal rank. We feel also that the *Opisthocosmiinae* as here understood should, in a linear classification, precede the *Ancistrogastrinae*, and come between the *Forficulinae*, and probably *Eudohrminae*, and the *Ancistrogastrinae*.

The genus *Neotobophora* Scudder⁶ has as its genotype, by monotypy, *N. bogotensis* Scudder, based on a single female from Bogotá, Colombia. While recorded more than once by later authors it would seem, as elaborated below, that the species has remained virtually unrecognized until the present time.

While I was engaged in the present study Mr. Hebard placed in my hands two remarkable male *Neolobophorine* specimens

⁵ Trans. Amer. Entom. Soc., XLV, pp. 95-96, (1919).

⁶ Proc. Boston Soc. Nat. Hist., XVII, p. 281, (1875).

from Muzo, Boyacá, Colombia.⁷ These individuals possessed very elongate, slender, simple forceps, and were in every way quite different from anything seen previously. Efforts to locate then invariably led me to *Neolobophora bogotensis*, the original description of which was discouragingly indefinite about features which might have assisted in the recognition of the opposite sex. A call for help to Dr. Nathan Banks, at the Museum of Comparative Zoology, elicited some very useful notes made from the unique type of Scudder's *bogotensis*. These critical observations are sufficiently convincing to demonstrate that the Muzo insect is the previously unknown male of Scudder's species.

It is evident from the Muzo individuals of *bogotensis* that the erection of two new genera is necessary, one to accommodate the "*Neolobophora*" *ruficeps* of the literature of recent decades, and the other to include the insect recorded as *Neolobophora bogotensis* by Bormans from Central America. Hebard's genus *Neocosmiella*⁸ is the closest relative of true *Neolobophora*, as one might expect from its geographic propinquity, but it differs in certain features which might be tabulated as follows:

<i>Neolobophora</i>	<i>Neocosmiella</i>
(On basis of male sex)	(Male sex only known)
Antennae with second, third and fourth joints together subequal to proximal joint.	Antennae with second, third and fourth joints together one and one-third times as long as proximal joint.
Tegminal keel at humeral angle distinct, but not carinately elevated, becoming obsolete at distal fourth.	Tegminal keel at humeral angle very marked, carinately elevated, becoming obsolete at distal fourth.
Surface of tegmina apparently smooth to the naked eye, minutely shagreenous under considerable magnification.	Surface of tegmina coarsely coriaceous-punctate, visible to the naked eye.

These two groups are unquestionably developments from a common ancestor, but their features of difference appear to warrant generic separation. When the female sex of *Neocosmiella* is known, and the tarsal structure of the two genera is compared, we will be in a better position to discuss more critically their affinity. The unique type of *Neocosmiella* now lacks complete tarsi.

⁷ VIII, 1921, (A. Maria), [Hebard Collection].

⁸ Trans. Amer. Entom. Soc., XLV, p. 95, (1919).

RHYACOLABIS⁹ new genus.

This interesting genus shares certain features with *Neolobophora* and others with *Neocosmiella*, to both of which it is related. From these two genera, however, it differs in the surface of the abdomen being hirsute, the tegminal keel complete and the pronotum weakly transverse. From *Neolobophora*, *Rhyacolabis* also can be distinguished by the tegminal keel being strongly developed, carinately elevated, instead of moderately evident and not carinately elevated, while it agrees with *Neolobophora* in having the surface of the tegmina minutely shagreenous when seen under a strong lens, and apparently smooth to the naked eye. From *Neocosmiella* the new genus readily can be distinguished by the tegmina having their surface as above, and not coarsely coriaceous-punctate, as well as in the lateral portions of the pronotum being broad and greatly encroaching upon the disk mesad, instead of narrow and subequal, as in *Neocosmiella*.

In the absence of the male sex of *Rhyacolabis* it may seem hazardous to describe the insect as a new genus, but as the species on which it is founded has been figured and reported for many years, and the differences appear, from our knowledge of allied genera, to be of considerable importance, no other course is open. This is clearly evident when it is realized that to attempt to fit it in either of the other genera would do violence to their cohesiveness.

Linearly arranged the genera of this assemblage, which we have had to examine in connection with our Costa Rican study, would stand as follows: *Rhyacolabis*, *Neocosmiella*, *Neolobophora* and *Metresura*. The genus *Rhyacolabis* has a facies which is appreciably *Ancistrogastrine*. The African genus *Archidux* Burr¹⁰ is apparently a near relative of *Rhyacolabis*, having a complete humeral tegminal keel, but it has the abdomen smooth and the limbs elongate, while doubtless other important features would be found to exist on comparison. *Archidux* has a pronotum and limb development much as in *Neolobophora* and *Neocosmiella*, while its general facies suggests *Metresura*, but the head structure alone prevents confusion with the latter genus.

⁹ From *ρύζα volcano*, and *λαβίς forceps*.

¹⁰ Ann. and Mag. Nat. Hist., (8), iv, p. 124, (1909).

Generic Description.—Head short and broad, with twin impressions between eyes; occiput uninflated, sutures faint. Pronotum subquadrate, narrowly transverse, weakly narrower than width across base of tegmina; lateral areas broad. Tegmina abbreviate, attinent, subobliquely truncate distad; humeral keel prominent, carinately elevated, continuous; surface of tegmina minutely shagreenous under magnification. Wings not evident. Abdomen with stink glands of third tergite weakly developed, those of fourth tergite strongly developed; sides of tergites simple; disto-dorsal tergite of female simple; subgenital plate of female ample; surface of abdomen and forelegs with a thin but regularly distributed clothing of adpressed golden hairs.

Genotype. *Rhyacolabis anachoreta* new species.

Rhyacolabis anachoreta¹¹ new species (Plate XVII, figures 2 and 3.)

1893. *Xcolobophora bogotensis* Bormans, Biol.-Cent.-Amer., Orth. 1, p. 8, pl. II, fig. 9. [♀; "Volcan de Irazu, 6000-7000 feet, Costa Rica; Volcan de Chiriqui, 2500 to 4000 feet, Panama."] (Not *Xcolobophora bogotensis* Seudder, 1875.)

1900. *Xcolobophora bogotensis* Bormans, Das Tierreich, XI, p. 100. [♀; "Costa Rica am Vulkan von Irazu, in 1830-2130 m. Höhe, Panama am Vulkan von Chiriqui, in 760-1200 m. Höhe."] (Not *Xcolobophora bogotensis* Seudder, 1875.)

The figure given by Bormans in the Biologia will greatly assist in the recognition of this previously misunderstood species. The character of the pronotum, the general form of the tegmina, the position and indication of their humeral keel, and the general proportions are all shown sufficiently well to make the figure of real use. Although the type is a female I feel less hesitation about describing it than would be the case if we had no previously published information.

Type.—♀; Volcano of Irazù, Costa Rica. February 22, 1902. (M. Cary.) [Hebard Collection, Type no. 782.]

Size rather small; form broad, depressed; surface of sterna, abdominal tergites and sternites, subgenital plate, forelegs and limbs well clothed with short hairs, these erect on sterna, moderately or distinctly depressed elsewhere.

Head broad, very slightly broader across eyes than greatest length, post-ocular portion of head very faintly longer than eyes, latero-caudal angles very broadly rounded; occiput with its surface bearing a very slight depression mesad, but otherwise smooth, with sutures distinctly but delicately indicated, and not at all impressed.

¹¹ *A hermit*—in allusion to its isolated habitat and hairy covering.

Pronotum broader than long; cephalic margin truncate; latero-cephalic angles narrowly rounded; lateral margins subparallel, areuato-truncate; latero-caudal angles rounded obtuse; caudal margin broadly areuate. Surface of disk in section gently arcuate, with an impressed median sulcus in cephalic half, followed at caudal two-thirds by a median circular pit-like depression, paired circular depressions placed in middle of lateral halves of cephalic section of disk; mesad the disk is narrowed by extension of lateral areas, which widen regularly caudad to this point of greatest width, where they individually constitute one-fifth of total pronotal width, then by a pronounced meso-laterad directed oblique definition, become obsolete. Lateral areas very appreciably reflexed dorsad.

Tegmina with greatest length equal to one and one-fourth times greatest length of pronotum, seen from dorsum the pair slightly and regularly broaden caudad, except in distal fourth, where the humeral carinae are subparallel when tegmina are in normal position; sutural margins in contact for greater portion of their length, exposing scutellum proximad; distal margin truncate, but little oblique, nearly transverse; humeral keel carinate, elevated, pronounced, continuous; costal margin straight for proximal two-thirds, in distal third arcuate to keel; marginal field with width equal to slightly more than one-fourth of length of same.

Abdomen broad, short fusiform. Disto-dorsal tergite rather small, symmetrically trapezoidal; surface moderately depressed meso-distad. Subgenital plate very ample, scoop-shaped, its free margin broadly arcuate with faint median flattening. Forceps simple, tapering, tips moderately hooked and weakly recurved, internal margin serrulate; surfaces striatulate, particularly along dorso-internal section.

Limbs largely damaged or missing. Cephalic limbs short and robust.

General color deep bay on the dorsum of abdomen, becoming dresden brown to auburn on venter, tegmina, disk of pronotum and head, latter pale on occiput. Lateral areas of pronotum pale chamois. Forceps pale ochraceous-tawny. Remaining limbs ochraceous-buff.

Length of body (exclusive of forceps) 8 mm.; length of pronotum, 1.35; greatest width of pronotum 1.6; length of tegmen, 1.68; greatest width of tegmen, 1.09; length of forceps, 2.25.

In addition to the type we have before us an immature specimen of small size, bearing the same data.

METRESURA¹² new genus

From *Necolobophora* and *Rhyacolabis* this genus is readily distinguishable by the inflated and divided occiput, the small eyes and the tegmina being without true humeral keels. As is the case with *Necolobophora*, *Metresura* also differs from *Rhyacolabis* in the broad disk and narrow lateral sections of the

¹² From μετρέω *measuring* and οὐρά *tail*, in allusion to the divider-like forceps of the male.

pronotum, the non-hirsute abdomen and elongate and slender limbs. From *Neocosmiella* Hebard the new genus differs in the inflated and divided occiput, small eyes, and in the absence of true tegminal keels, while the male forceps also lack the prominent tooth found at the proximo-lateral base in *Neocosmiella*.

Generic Description.—Head broad cordiform; occipital sutures distinct, occiput weakly or distinctly bullate; postocular portion of head longer than eyes. Pronotum subquadrate, lateral margins subparallel; latero-cephalic angles rectangulate, at most but narrowly rounded; caudal margin moderately arcuate; disk of pronotum broad, weakly arcuate transversely; median sulcus distinct cephalad; lateral ascending sections very narrow. Tegmina brief, little longer than pronotum; distal margin obliquely concavo-truncate; juncture of horizontal dorsal and vertical lateral sections of tegmina without true keel. Wings not evident. Abdomen with third and fourth tergites with well-developed lateral folds, that on fourth larger; surface of abdomen punctulate, polished. Forceps of male slender, elongate, not contiguous at the base, with at least one tooth near median section, apices incurved. Forceps of female simple, attenuate, apices narrowly incurved. Pygidium of male distad simple or bispinose. Limbs elongate.

Genotype.—*Metresura ruficeps* (Burmeister) [*Forficula ruficeps*].

In addition to the genotype, *Metresura* contains at least two species which have been referred to *Neolobophora*, and which should be removed from the latter—*borellii* Burr and *insolita* Borelli. Of the former material is now before us,¹³ and the latter is clearly a member of the same generic unit. Several other species have been referred to *Neolobophora* which we have not been able to examine. The African genus *Archidux* Burr shows distinct relationship to *Metresura* on one hand and the restricted *Neolobophora* complex on the other. From *Metresura*, however, it can be distinguished by the non-impressed head sutures and uninflated occiput, as well as the possession of complete and apparently well indicated humeral tegminal keels. Burr's *borellii* has the occipital inflation less marked than in *ruficeps*, and the tegmina are more sharply folded proximad at the

¹³ See Hebard, Trans. Amer. Entom. Soc., XLIII, pp. 425-526, (1917).

humeral angle than in the latter species, but there can be no confusion with the very smooth head and completely keeled tegmina of *Neolobophora*.

ANCISTROGASTRINAE

Paracosmia carrikeri new species (Plate XVII, figures 4, 5 and 6.)

A striking member of the genus, more nearly related to *P. gulosa* (Scudder) and *silvestrii* Borelli than to the other species which have been referred to the genus. From *gulosa*, with a male paratype of which the new form has been compared,¹⁴ *carrikeri* is seen to differ chiefly in its more elongate, attenuate form; in the head being more elongate cordiform; the pronotum proportionately narrower, being appreciably narrower than the head, and the lateral margins nearly straight, faintly convergent caudad; the abdomen elongate fusiform; in the fifth and sixth dorsal abdominal segments being without lateral carinae; in the ultimate dorsal abdominal segment having the lateral margins weakly convergent caudad, instead of subparallel; in the more elongate and distad attenuate forceps, which are straighter in profile, with the apices more falcate and without as marked a predistal "bite" as found in *gulosa*; in the angulate emargination instead of truncate median emargination of the penultimate ventral abdominal segment, and in the elongate, attenuate limbs. From *silvestrii* Borelli the new form differs in the same features as from *gulosa*, except that the ultimate dorsal abdominal segment agrees in shape in *silvestrii* and *carrikeri*, and in *silvestrii* the tegmina are short and the wings not evident, while in *carrikeri* these are as in *gulosa*. Hebard¹⁵ already has suggested that *gulosa* and *silvestrii* may represent forms of the same species, which appear to us to be quite probable.

No comparison is necessary with the other species which have been referred to *Paracosmia*, or any species which have been assigned to related genera.

Type.—♂; Turrialba, Costa Rica. (M. A. Carriker, Jr.) [Hebard Collection, Type no. 212.]

Size moderately large; form subdepressed; surface smooth but dull.

Head subelongate cordiform, slightly longer than broad, width across eyes faintly greater than caudad of same; caudo-lateral angles broadly rounded;

¹⁴ See Hebard, Trans. Amer. Entom. Soc., XLIII, p. 128, (1917).

¹⁵ Vide supra.

occipital margin very slightly and broadly emarginate; sutures distinctly but shallowly marked; proximal antennal joint conico-cylindrical, greatly elongate, one and one-half times as long as greatest length of eye; second joint minute; third joint not quite half length of first; remainder missing.

Pronotum with length subequal to width, latter less than that of head; cephalic margin slightly oblique-truncate laterad, latero-cephalic angles narrowly rounded, lateral margins faintly arcuate, faintly converging caudad, broadly rounding into the caudal margin, which is well arcuate with the faintest possible median angle; disk of prozona considerably elevated, with a distinct medio-longitudinal sulcus, laterad of which is placed on each side a single impressed puncture; metazona depressed, with a slight but distinct median carina, lateral portions considerably reflexed dorsad.

Tegmina twice as long as pronotum, broad, their combined width almost twice that of pronotum; latero-cephalic angles very well rounded, when viewed from dorsum the lateral margins are seen to be slightly converging caudad; tegmina carinate throughout their length; caudal margin slightly oblique, weakly concave. Wings with exposed portion slightly shorter than length of pronotum, arcuate laterad, their apices squarely truncate.

Abdomen subfusiform in outline; third and fourth segments bearing distinct lateral plicae, those of fourth segment the larger; laterad the dorsal segments have their caudal margins weakly angulate produced caudad, these non-carinate. Penultimate dorsal abdominal segment subrectangulate, transverse, greatest length contained one and one-half times in its greatest width, lateral margins slightly converging caudad; surface of segment with a faint median sulcus succeeded caudad by a small median pit near the caudal margin, latter very slightly but broadly arcuate between the bases of the forceps; lateral angles of penultimate dorsal abdominal segment well recurved beneath the forceps, with two spines of which the caudal (and also apical) one is the larger. Forceps moderately elongate, enclosing an elongate pyriform area, the arms distinctly but not greatly depressed; base on internal side with a large blunt shoulder-like projection, thence moderately arcuate and converging to the considerably recurved and falciform tips; no teeth present but internal margin crenulate for almost its entire length, the pre-apical angle found in many *Ancistrogastrea* forms being represented by an obtuse angle. Penultimate ventral abdominal segment broadly obtuse-angulate emarginate, with lateral angles produced into short acute projections, lateral margins of the segment converging caudad, the whole plate decidedly transverse. Limbs elongate and very slender; caudal metatarsus slightly exceeding the third tarsal joint in length.

General color bay, the tegmina and exposed portion of the wings largely vandyke brown. Head, aside from the labrum, clypeus and eyes, burn sienna; clypeus vandyke brown and labrum marked with same; eyes seal brown; two proximal antennal joints seal brown, the third raveny-olive. Pronotum vandyke brown mesad, bordered laterad on the prozona with clear chestnut, the whole broadly margined laterad with clear ochraceous. Tegmina with a poorly defined premedian spot and a washed latero-cephalic

angle, ochraceous-rufous. Forceps similar to the abdomen in color. Femora with proximal portion distinctly ochraceous, the remainder seal brown; tibiae ferruginous.

Length of body (exclusive of forceps), 13.3 mm.; length of pronotum, 1.8; greatest width of pronotum, 1.9; length of tegmen, 3.6; length of forceps, 5.8.

The type of this most interesting species is unique. It is with the greatest of pleasure that we dedicate this species to its collector, M. A. Carriker, Jr., a friend of many years, a most genial and delightful companion, and a splendid naturalist in the field and in the laboratory.

EXPLANATION OF PLATE XVII

Fig. 1.—*Prolabia calverti* new species. Dorsal view of forceps and pygidium of male (*type*). (Greatly enlarged.)

Fig. 2.—*Rhyacolabis anachoreta* new genus and species. Dorsal outline of head, pronotum and tegmina of female (*type*). ($\times 9$)

Fig. 3.—*Rhyacolabis anachoreta* new genus and species. Lateral outline of tegmen of female (*type*). ($\times 9$)

Fig. 4.—*Paracosmia carrikeri* new species. Dorsal view of male (*type*). ($\times 3$)

Fig. 5.—*Paracosmia carrikeri* new species. Outline of venter of apex of abdomen, with base of forceps, of male (*type*). ($\times 6$)

Fig. 6.—*Paracosmia carrikeri* new species. Outline of lateral aspect of apex of abdomen, with base of forceps, of male (*type*). ($\times 6$)